recent railway mania, so many of the most unprincipled and unpractised persons have thrown themselves into the engineering profession, we need not wonder, nor indeed should we be sorry to see it, if the legislature should find it necessary to exercise a control such as it does in *law* and *medicine*. It certainly does seem necessary to put some restrictions upon the power of incompetent persons to enter these professions; and no mode seems so practicable as a charter of incorporation and a board of examiners to decide upon the qualifications of candidates in each of the professions. We are sure it would be a boon to the public, and not less a boon to the professions themselves. It would secure to the public qualified artists; it would remove from the professions that load of discredit which the present open system inevitably entails upon them, and with increasing accumulation each succeeding year.

We scarcely, however, hope to see this desired consummation yet; but we do know, from many letters which we have received, that a great number of the younger members of both professions are anxiously desiring to *qualify themselves* for an efficient and honourable execution of their duties. We have often been requested to point out a suitable course of study and reading in mathematics, which shall mainly, if not wholly, have a direct professional bearing — including all the great features of what is essential, and precluding those inquiries which, however interesting to professional mathematicians, are superfluous to professional architects and engineers. Yielding to none in our wishes to be "useful in our day and generation," we shall attempt to point out, not only the subjects, but the manner of study which appear to us to be best adapted to the end in view; and we trust that should the day come—which we yet hope to see—when some test of capability for professional duties shall be rendered legally inoperative, the suggestions which we may offer will have proved a beneficial aid to many a one qualifying himself, who would otherwise have been unable to do so, in that most important branch of his acquirements, the *mathematical*.

Although large premiums are paid with articled pupils both to architects and engineers, we believe there is not a single case producible, in which the slightest attention to mathematical studies is included in the course of professional instruction. How, indeed, should there be? The youth may be advised, or he may not be, "to get a few lessons in mathematics from some private teacher;"—but in most cases the advice will be looked upon as a bore, and perhaps given with a half sneer; and even if adopted, he is left, like his tutor, in the dark as to the nature and character of the mathematics that he wants. He blunders through a few lessons, gets disgusted, and his mathematical course is finished with the payment of his first guinea!—*Mechanics' Magazine*.

## WESTMINSTER COURT OF SEWERS.

On Friday the 20th inst., a court was held. Mr. Leslie in the chair. After the minutes of several preceding courts had been read, in which it appeared the surplus from the rates of 1845, applicable to the year 1846, was 10,218*l.* 14*s.* 6*d.*, the solicitor to the court made an application for petitions to Parliament against the Windsor Railway, and Surrey Grand Junction Railway Bills, which were in consequence then duly signed by order of court.

The solicitor also presented a report upon the dangers likely to arise to the district, from the weakened state of the banks of the Kensington canal. The court ordered a special court to be held on Friday, the 27th instant, to sign a precept to the sheriff for a jury, to consider by whose default the evils pointed out had arisen, and to amerce the parties for their neglect; notice to be given to all parties interested of the said special court.

The first office clerk, Mr. Hatton's, salary was increased 50*l.* per annum, on account of his general good conduct and attention to his duties. The consideration of Mr. Doull's memorial for a pension, was postponed to the next ordinary meeting of the court, the subject to be then discussed on the motion of Mr. Cumberlege and Mr. Godrich, that he be allowed a year's salary on account of the abolition of his office as accountant-surveyor.

At this court, the new chief surveyor presented five special reports with several drawings, one of which to accompany the general instructions to applicants for building sewers, gullies, side entrances, elicited the approbation of the court, and was ordered to be engraved forthwith.

## INSTITUTION OF CIVIL ENGINEERS.

Tuesday, March 24th, 1846. Sir John Rennie, President, in the chair.

The paper read was by Mr. W. Parks, describing the "Estuary of the River Severn." After giving a brief account of the Severn above Gloucester, the paper proceeded to describe the character of the river at Longney Point, about ten miles below Gloucester, where it becomes a tidal estuary, and where the most important circumstance to be taken into consideration as regards navigation, is the rise of the tide. Below Longney, the river becomes broad and shallow, and at low water presents an extensive series of shoals composed of mud and sand. The stream there is rapid, and the general fall of the surface is much increased. This lower portion of the Severn forms a great natural weir, which the shipping avoid by taking the Berkeley Ship Canal.

Viewed in reference to its tides, that portion of the river might be considered as part of the Bristol Channel, for it is from the the funnel-shaped form of that arm of the sea that it derives its facilities for navigation; in consequence of this form, the water running up is, as it were, choked by the downward current and is raised above its sea level, thus the lift of a high tide at Kingroad is 47 feet, at the Old Passage it is 45 feet, at Chepston 37 feet 10 inches, and at Beachley 40 feet 6 inches. At this latter point is situated the Old or Aust passage on the main road from Bristol to Wales. The channel for navigation and the main set of the tide is close to the North or Beachley shore. The flood-tide flows at about 6½ miles an hour, and lasts 4½ hours, the ebb 7½ hours. Small vessels are enabled to pass up at 1½ hour after flood-tide commences; larger vessels soon after half flood, and reach Sharpness Point, the entrance of the Gloucester and Berkeley Canal before high water. Above Sharpness Point, the river at low water presents an immense extent of sandy and muddy shoals for five miles. Here is first observed the curious phenomenon called the "Bore." The impetuosity with which the two currents meet, and the shallowness of the low water channel, cause an almost vertical rise of 2 feet or 3 feet and sometimes 5 feet, extending across the river and varying its velocity as it passes over deep or shallow water.

The paper then proceeded to notice the capabilities of the lower part of the Severn for improvements, and stated that one of the improvements of which it was susceptible was cutting a canal across the neck of land from Framilode to Hock Crib, which would much facilitate the downward trade by effecting a saving of two tides to vessels sailing in that direction. Any general scheme of improvements was scarcely practicable, as if the natural impediments in the lower part of the river were removed, the effect might be to nearly drain the upper portion. Still, since local alterations might be advantageously made, and the navigation would be facilitated, the author seized the opportunity of suggesting the advantages of having one standard height as an uniform datum line all round the coasts of Great Britain, to which standard all levels should refer. In the discussion which ensued the importance of the subject appeared to be generally admitted, and the good example given by the author in communicating to the Institution the observations made during the course of his survey of a portion of the river for Mr. Walker, was particulary eulogized.

Interment in Towns.—Mr. Mackinnon gave notice, that on Thursday, the 2nd of April, he would move to renew his bill for the prevention of interments in the neighbourhood of large towns. Mr. Walker has presented a petition.

The Royal Literary Fund.—Mr. J. Newman, F.S.A., is appointed honorary architect, in the room of the late Mr. Rhodes, who held the appointment forty years.

## BUILDINGS ACT AMENDMENT BILL.

This bill has received the royal assent, and is now part of the law of the land. The egregious blunder in it, pointed out last week, was *not altered*, but goes to increase the sum of errors and inconsistences which disfigure the Act as a whole.

## Miscellanea.

Condition of Labourers' Cottages.—The spread of those evils which the working classes unhappily too much indulge in are, in a great measure, ascribed to their uncomfortable dwelling at home. In Berkshire, Mr. Parker, in Mr. Chadwick's "Sanitary Report," observes that "the floors of the cottages are laid with red tiles called 'flats,' or with bricks of a remarkably porous quality; and as each of these tiles or bricks will absorb half a pint of water, so do they become the means by which vapour is generated. The cleanly housewife, who prides herself upon the neat and fresh appearance of her cottage, pours several pails of water upon the floor, and when she has completed her task with the besom, she proceeds to remove with a mop or flannel so much of the water as the bricks have not absorbed. After having cleansed the cottage, the fire is usually made up to prepare the evening meal, and vapour is created by the action of the heat on the saturated floor. Thus the means adopted to purify the apartment are equally as injurious to the health of the inmates as the filth and dirt, frequently too abundant in the cottages of labouring persons." In the adjoining county, Buckinghamshire, Mr. Parker observes, the construction of the cottages is frequently unwholesome. He says, "the improper materials of which cottages are here built, and their defective construction, are also the frequent cause of the serious indisposition of the inmates. Next to good drainage and thorough ventilation, the foundation of a cottage is the most important consideration."

Sale of Land at Birkenhead.—The immense sale of land at Birkenhead, consisting of nearly 1,000 plots for building purposes, belonging to Mr. William Jackson, took place yesterday afternoon, at the Woodside Hotel. It was most respectably and numerously attended, the large room being crowded throughout to excess. About half-past 1 o'clock the auctioneer, Mr. F. Hodgson, commenced the business by reading the printed conditions, after which lot 1 was put up. It consisted of 16,022 square yards of land, situated in Slatey-road and Euston-grove, divided into twelve lots, the purchaser to have the option of taking two lots on the whole. Mr. Robert Hughes put up the lot at 7*s.*, and the bidding was run up to 8*s.*, at which price Mr. Hughes became the purchaser of two lots. The sale then went on, and eventually about twenty lots were sold for upwards of 7,000*l.*, the prices ranging between 8*s.* 6*d.* and 26*s.* per yard, most, however, of it being situate in the outskirts of the town.—*Liverpool Courier*.

The Value of Smoke.—A striking instance of economic talent came to our knowledge, in the district of Alston Moor. From the smelting hearths of one "house," an arched tunnel conducts the smoke to an outlet, at a distance from the works, in a waste spot, where no one can complain of it. The gathering matter or "*fume*," resulting from the passage of the smoke, is annually submitted to a process, by which it had at that time yielded lead enough to pay for the construction of a chimney. A similar tunnel chimney, three miles in length, was erecting at Allendale. Its *fume* will yield thousands of pounds sterling per annum! Truly, here it may be said that smoke does not end in smoke.—*British Quarterly Review*.

Parish Churches.* — Under this title, Messrs. Brandon, whose valuable "Analysis of Gothick Architecture" is now nearly completed, have commenced a work which promises to be useful, being perspective views of English ecclesiastical structures in lithography with plans to a uniform scale, and brief description. The first number contains a view and plan of seven churches at an almost nominal price.

* Published by Geo. Bell, Fleet-street, and by the authors, Beaufort-buildings, Strand.